ABSTRACT

A liquid cooled semiconductor device is provided. The device includes a semiconductor die, a heat spreader, a wetting material, a sealant, a substrate, and a base. The spreader is mounted to a substrate such that a first side of the spreader is exposed on one side of the substrate and that a second side of the spreader is exposed on an opposing side of the substrate. Attached to a first side of the spreader is the semiconductor die. The wetting material is used to provide a thermal/electrical connection between the die and heat spreader. Sealant is provided between the die and the heat spreader to encapsulate and contain the wetting material. The substrate is mounted to the base, whereby the second side of the spreader is exposed to allow fluid to flow across the second side, directed within a channel defined by the base, and transfer heat away from the spreader.